

Claim 66. An unmanned vehicle for displacing manure which comprises a steering unit for steering the vehicle, a frame, a propelling unit for propelling the vehicle, a manure displacing means for displacing the manure, said manure displacing means being fitted in the vehicle so that said manure displacing means supports the vehicle while it is operating, and orientation means that controls the vehicle so that it travels along a predetermined course, said course being determined by guidance means that comprises reinforcement in a concrete floor over which the vehicle travels.

Claim 67. An unmanned vehicle for displacing manure which comprises a steering unit for steering the vehicle, a frame, a propelling unit for propelling the vehicle, a manure displacing means for displacing the manure, said manure displacing means being fitted in the vehicle so that said manure displacing means supports the vehicle while it is operating, and orientation means that controls the vehicle so that it travels along a predetermined course, said course being determined by guidance means which comprises an electrically conducting wire in which an electrical current is flowing.

Claim 68. An unmanned vehicle for displacing manure which comprises a steering unit for steering the vehicle, a frame, a propelling unit for propelling the vehicle, and a manure displacing means for displacing the manure, said manure displacing means being fitted in the vehicle so that said manure displacing means supports the vehicle while it is operating, said steering unit comprising guidance means which includes following means for detecting and following a wall, the vehicle being substantially circular when viewed from above, said following means being disposed substantially proximate the vehicle's circumference.

Claim 69. An unmanned vehicle or displacing manure which comprises a steering unit for steering the vehicle, a frame, a propelling unit for propelling the vehicle, and a manure displacing means for displacing the manure, said manure displacing means being fitted in the

vehicle so that said manure displacing means supports the vehicle while it is operating, said steering unit comprising guidance means which comprises following means for detecting and following a wall, said following means substantially surrounding and at least in part being supported by said manure displacing means.

Claim 70. An unmanned vehicle for displacing manure which comprises a steering unit for steering the vehicle, a frame, a propelling unit for propelling the vehicle, and a manure displacing means for displacing the manure, said manure displacing means being fitted in the vehicle so that said manure displacing means supports the vehicle while it is operating, said steering means comprising guidance means, said guidance means comprising following means for detecting and following a wall, said following means comprising a freely rotating substantially circular element.

Claim 71. A vehicle in accordance with Claim 70, wherein said circular element comprises a wheel.

Claim 72. A vehicle in accordance with Claim 70, wherein said circular element comprises a disc.

~~Claim 73. A vehicle in accordance with Claim 70, wherein said circular element comprises a sphere.~~

Claim 74. An unmanned vehicle for displacing manure which comprises a steering unit for steering the vehicle, a frame, a propelling unit for propelling the vehicle, a manure displacing means for displacing the manure, said manure displacing means being fitted in the vehicle so that said manure displacing means supports the vehicle while it is operating, and anti-bumping means which functions to prevent said manure displacing means from moving too far from a floor by which it is supported.

Claim 75. A vehicle in accordance with Claim 74, wherein said anti-bumping means comprising a bumper.

Claim 76. A vehicle in accordance with Claim 74, wherein said anti-bumping means comprises a bracket.

Claim 77. A vehicle in accordance with Claim 74, wherein said anti-bumping means comprises an anti-bumping sensor for performing the function of detecting movements of said manure displacing means away from a floor which supports the vehicle, and coupling means coupling said anti-bumping sensor to said propelling unit.

Claim 78. An unmanned vehicle for displacing manure which comprises a steering unit for steering the vehicle, a frame, a propelling unit for propelling the vehicle, and a manure displacing means for displacing manure, said manure displacing means being non-rotatable and providing support for a major part of the vehicle's weight.

Claim 79. A vehicle in accordance with Claim 78, comprising a first supporting means and a second supporting means, said first supporting means and said second supporting means engaging an underlying floor and supporting said frame from said floor, said first supporting means and said second supporting means both being turnable relative to the underlying floor, said first supporting means and said second supporting means being located in a substantially vertical plane and being coupled to said propelling unit, the total weight of the vehicle being borne by said first supporting means, said second supporting means and said manure displacing means.

Claim 80. A vehicle in accordance with Claim 78, wherein said propelling unit includes said steering unit which comprises at least one rotatable propelling member.

Claim 81. A vehicle in accordance with Claim 78, wherein said propelling unit comprises at least two independently driven propelling members.

Claim 82. A vehicle in accordance with Claim 81, wherein each of said propelling members comprises a wheel.

Claim 83. A vehicle in accordance with Claim 81, wherein each of said propelling members comprises a caterpillar track.

Claim 84. A vehicle in accordance with Claim 78, comprising orientation means for determining a relative position of the vehicle.

Claim 85. A vehicle in accordance with Claim 78, comprising orientation means that controls the vehicle so that it travels along a predetermined course.

Claim 86. A vehicle in accordance with Claim 85, wherein said course is determined by guidance means which comprise apertures in the floor over which the vehicle is traveling.

Claim 87. A vehicle in accordance with Claim 85, wherein said course is determined by guidance means which comprises reinforcement in a concrete floor over which the vehicle travels.

Claim 88. A vehicle in accordance with Claim 85, wherein said course is determined by guidance means which comprises an electrically conductive wire in which an electrical current is flowing.

Claim 89. A vehicle in accordance with Claim 78, wherein said steering unit comprises orientation means, said orientation means comprising a compass.

Claim 90. A vehicle in accordance with Claim 78, wherein said steering means comprises orientation means which includes a gyroscope.

Claim 91. A vehicle in accordance with Claim 78, wherein said steering unit comprises orientation means which includes an air level device.

Claim 92. A vehicle in accordance with Claim 78, wherein said steering unit comprises an orientation means which includes a clinometer.

Claim 93. A vehicle in accordance with Claim 78, wherein said steering unit comprises orientation means which includes an accelerator meter.

Claim 94. A vehicle in accordance with Claim 78, wherein said steering unit comprises guidance means, said guidance means comprising following means for detecting and following a wall.

Claim 95. A vehicle in accordance with Claim 78, wherein said steering unit comprises guidance means which includes following means for following the edge of a cubicle.

Claim 96. A vehicle in accordance with Claim 94, wherein the vehicle is substantially circular when viewed from above, said following means being disposed substantially proximate the vehicle's circumference.

Claim 97. A vehicle in accordance with Claim 94, wherein said following means substantially surrounds and is at least in part supported by said manure displacing means.

Claim 98. A vehicle in accordance with Claim 94, wherein said following means comprises a freely rotating substantially circular element.

Claim 99. A vehicle in accordance with Claim 98, wherein said circular element comprises a wheel.

Claim 100. A vehicle in accordance with Claim 98, wherein said circular element comprises a disc.

Claim 101. A vehicle in accordance with Claim 98, wherein said circular element comprises a sphere.

Claim 102. A vehicle in accordance with Claim 78, comprising protective facilities to protect the vehicle against obstacles.

Claim 103. A vehicle in accordance with Claim 102, wherein said protective facilities comprise a bumper.

Claim 104. A vehicle in accordance with Claim 102, wherein said protective facilities comprise a sensor for detecting cows.

Claim 105. A vehicle in accordance with Claim 102, wherein said protective facilities comprise wall following means.

Claim 106. A vehicle in accordance with Claim 102, wherein said protective facilities comprise positioning means for determining the position of an obstacle relative to the vehicle.

Claim 107. A vehicle in accordance with Claim 106, wherein said positioning means comprises a clinometer.

Claim 108. A vehicle in accordance with Claim 106, wherein said positioning means comprises an acceleration meter.

Claim 109. A vehicle in accordance with Claim 106, wherein said positioning means includes signal producing means that actuates said steering unit.

Claim 110. A vehicle in accordance with Claim 78, wherein said manure displacing means comprises a brush.

Claim 111. A vehicle in accordance with Claim 78, wherein said manure displacing means comprises a manure slide.

Claim 112. A vehicle in accordance with Claim 78, wherein said manure displacing means comprises a spraying unit.

Claim 113. A vehicle in accordance with Claim 78, comprising anti-bumping means which functions to prevent said manure displacing means from moving too far from a floor by which it is supported.

Claim 114. A vehicle in accordance with Claim 113, wherein said anti-bumping means comprises a bumper.

Claim 115. A vehicle in accordance with Claim 113, wherein said anti-bumping means comprises a bracket.

Claim 116. A vehicle in accordance with Claim 113, wherein said anti-bumping means comprises an anti-bumping sensor for performing the function of detecting movements of said manure displacing means away from a floor which supports the vehicle, coupling means coupling said anti-bumping sensor to said propelling unit.

Claim 117. An unmanned vehicle for displacing manure from an area which comprises a frame carrying a propelling unit and which is substantially entirely supported by two endless members, said propelling unit not being connected to an external power source during the vehicle's operations, the vehicle further comprising non-rotatable manure displacing means, orientation means, steering means and protective means coupled by coupling means to said propelling unit, whereby the vehicle's course of travel within said area is controlled by the vehicle and the vehicle is prevented from colliding with obstacles in said area.

Claim 118. A vehicle in accordance with Claim 117, wherein said endless members comprise wheels and the center of gravity of said wheels is between said wheels and said manure displacing means.

Claim 119. An unmanned vehicle for displacing manure which comprises a steering unit for steering the vehicle, a frame, a propelling unit for propelling the vehicle carried by said frame, and a manure displacing means for displacing the manure carried by said frame, said manure displacing means being non-rotatable and bearing the major part of the vehicle's weight while the vehicle is operating.

Claim 120. A vehicle in accordance with Claim 119, wherein said propelling unit is self contained in the vehicle and is not connected to an external power source while the vehicle is operating.